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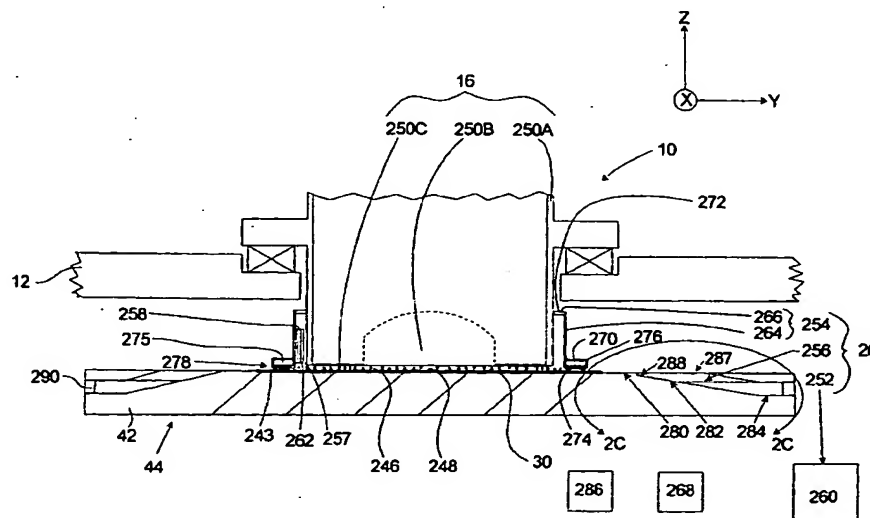
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(54) Title: **RUN-OFF PATH TO COLLECT LIQUID FOR AN IMMERSION LITHOGRAPHY APPARATUS**



(57) Abstract: An exposure apparatus (10) for transferring an image to a device (30) includes an optical assembly (16), an immersion fluid system (252), and a device stage assembly (20). The optical assembly (16) is positioned a gap (246) above the device (30). The immersion fluid system (252) fills the gap (246) with an immersion fluid (248). The device stage assembly (20) includes a sloped region (282) that facilitates movement of the immersion fluid (248) that exits the gap (246) away from the device (30). The device stage assembly (20) can include a collection region (284) and a recovery system (286) that recovers immersion fluid (248) from the collection region (284).

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International application No.

PCT/US04/09993

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : G03B 27/42

US CL : 355/27; 53

According to International Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 355/27; 53, 67; 396/611; 359/664,819; 428/141

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EAST - USPTO, DERWENT, JPO, EPO

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|--|-----------------------------|
| A | US 5,610,683 A (TAKAHASHI) 11 March 1997, figs. 1-3 and related text | 1, 14, 23 |
| A | US 6,191,429 A (SUWA) 20 February 2001, Figs. 9 and 10 and related text | 1, 14, 23 |
| A, E | US 6,788,477 A (Lin) 07 September 2004, , see entire document | 1, 14, 23 |
| A | JP 10-258249 (YOSHII et al) 29 September 1998, abstract and fig. 1 | 2, 4, 10, 15, 24 |
| A, E | US 2004/0109981 A1 (LAWRENCE et al) 10 June 2004, Fig.1 and related text | 2, 3, 6-9, 15, 17-20, 24-27 |



Further documents are listed in the continuation of Box C.



See patent family annex.

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